

WHAT IS CLAIMED IS:

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1. A semiconductor photo detecting device,  
comprising:

a semiconductor substrate having a flat  
side face; and

10 a photo absorption layer formed on said  
semiconductor substrate,  
wherein

an entire part of said flat side face is  
inclined to a line perpendicular to a principle  
15 plane of said semiconductor substrate; and

said flat side face is substantially  
perpendicular to an incoming photo signal.

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2. The semiconductor photo detecting  
device as claimed in claim 1, wherein said flat side  
face is a cleavage face of said semiconductor  
25 substrate.

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3. The semiconductor photo detecting  
device as claimed in claim 1, wherein said  
semiconductor substrate has another side face  
parallel to said flat side face.

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4. The semiconductor photo detecting  
device as claimed in claim 1, wherein said  
semiconductor substrate is a III-V group compound  
semiconductor substrate, and said flat side face is  
5 one of a (110) plane and a (111) plane.

10 5. The semiconductor photo detecting  
device as claimed in claim 1, wherein said flat side  
face is inclined to a line perpendicular to said  
principle plane at an angle of 30° or less.

15 6. The semiconductor photo detecting  
device as claimed in claim 4, wherein said principle  
20 plane is inclined to a (100) plane of said  
semiconductor substrate.

25 7. The semiconductor photo detecting  
device as claimed in claim 1, wherein said side face  
is covered by an anti-reflection film.

30 8. The semiconductor photo detecting  
device as claimed in claim 1, wherein said photo  
35 absorption layer is formed in a range in which a  
perpendicular line to said flat side face crosses.

9. The semiconductor photo detecting  
5 device as claimed in claim 1, further comprising,  
a first cap layer formed on said photo  
absorption layer; and  
an ohmic electrode formed on said cap  
layer.

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10. The semiconductor photo detecting  
15 device as claimed in claim 1, further comprising:  
a cap layer formed on said photo  
absorption layer; and  
a second conduction type region formed in  
a part of said photo absorption layer and said cap  
20 layer,  
wherein  
said photo absorption layer and said cap  
layer are a first conduction type; and  
said photo absorption layer is formed in a  
25 range in which a perpendicular line to said flat  
side face crosses.

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11. A manufacturing method of a  
semiconductor photo detecting device, comprising,  
a step of forming semiconductor layers  
including a photo absorption layer on an inclined  
35 semiconductor substrate,  
a step of forming semiconductor photo  
detecting devices including said photo absorption

layer by patterning said semiconductor photo detecting devices in multiple parts of said inclined semiconductor substrate,

- 5 a step of dividing said semiconductor substrate into multiple semiconductor photo detecting devices having one or more pairs of cleavage faces by cleaving said semiconductor substrate, and,

- 10 a step of forming an anti-reflection film on said cleavage faces.